CLAIMS

1. A hydrogel for use in the treatment or prevention of arthritis said hydrogel obtainable by combining acrylamide and methylene bis-acrylamide in amounts so as to give about 0.5 to 25% by weight polyacrylamide, based on the total weight of the hydrogel; radical initiation; and washing with pyrogen-free water or saline solution.

2. The hydrogel according to claim 1, wherein said combining acrylamide and methylene bis-acrylamide is in a molar ratio of 150:1 to 1000:1.

3. The hydrogel according to claim 1, comprising less than 15% by weight polyacrylamide, based on the total weight of the hydrogel, preferably less 10%, more preferably less than 7.5%, even more preferably less than 5%, most preferably less than 3.5% by weight polyacrylamide, based on the total weight of the hydrogel.

4. The hydrogel according to claim 3 comprising at least 1% by weight polyacrylamide, based on the total weight of the hydrogel, preferably at least 1.5%, such as 1.6% by weight polyacrylamide, based on the total weight of the hydrogel.

5. The hydrogel according to claim 1 further comprising at least 75% by weight pyrogen-free water or saline solution, preferably pyrogen-free water.

6. The hydrogel according to claim 7 comprising at least 80% by weight pyrogen-free water or saline solution, preferably at least 85%, more preferably at least 90%, even more preferably at least 95% by weight pyrogen-free water or saline solution.

7. The hydrogel according to claim 1 having a complex viscosity of 2 to 25 Pa s, such as about 3 to 20 Pa s, preferably about 3 to 18 Pa s, most preferably about 3 to 15 Pa s.

8. The hydrogel according to claim 1 having a complex viscosity less than 25 Pa s and an elasticity modulus less than 200 Pa, preferably having a complex viscosity less than 15 Pa s and an elasticity modulus less than 100 Pa.

9. Use of a hydrogel comprising about 0.5 to 25% by weight polyacrylamide, based on the total weight of the hydrogel, for the preparation of an endoprosthesis for alleviation or prevention of symptoms associated with arthritis.

10. The use according to claim 9, wherein the hydrogel comprises less than 15% by weight polyacrylamide, based on the total weight of the hydrogel, preferably less 10%, more preferably less than 7.5%, even more preferably less than 5%, most preferably less than 3.5% by weight polyacrylamide, based on the total weight of the hydrogel.

11. The use according to claim 10, wherein the hydrogel comprises at least 1% by weight polyacrylamide, based on the total weight of the hydrogel, preferably at least 1.5%, such as 1.6% by weight polyacrylamide, based on the total weight of the hydrogel.

12. The use according to claim 9, wherein the hydrogel has a complex viscosity of about 2 to 25 Pa s, such as about 3 to 20 Pa s, preferably about 3 to 18 Pa s, most preferably about 3 to 15 Pa s.

13. The use according to claim 12, wherein the hydrogel further comprises at least 75% by weight pyrogen-free water or saline solution, preferably pyrogen-free water.

14. The use according to claim 12, wherein the hydrogel comprises at least 80% by weight pyrogen-free water or saline solution, preferably at least 85 %, more preferably at least 90%, even more preferably at least 95% by weight pyrogen-free water or saline solution.

15. The use according to claim 9, wherein the endoprosthesis is injected into the intra-articular cavity of a joint.

16. The use according to claim 9, wherein the hydrogel comprises at least 90% by weight pyrogen-free water or saline solution.

17. A method of treating or preventing arthritis comprising administering a hydrogel to a mammal said hydrogel comprising 0.5 to 25% by weight polyacrylamide, based on the total weight of the hydrogel.

18. The method according to claim 17, wherein the hydrogel is obtainable by combining acrylamide and methylene bis-acrylamide in a molar ratio of 150:1 to 1000:1.

19. The method according to claim 17, wherein the hydrogel comprises less than 15% by weight polyacrylamide, based on the total weight of the hydrogel, preferably less 10%, more preferably less than 7.5%, even more preferably less than 5%, most preferably less than 3.5% by weight polyacrylamide, based on the total weight of the hydrogel.

20. The method according to claim 19, wherein the hydrogel comprises at least 1% by weight polyacrylamide, based on the total weight of the hydrogel, preferably at least 1.5%, such as 1.6% by weight polyacrylamide, based on the total weight of the hydrogel.

21. The method according to claim 17, wherein the hydrogel has a complex viscosity of about 2 to 25 Pa s, such as about 3 to 20 Pa s, preferably about 3 to 18 Pa s, most preferably about 3 to 15 Pa s.

22. The method according to claim 17, wherein the hydrogel further comprises at least 75% by weight pyrogen-free water or saline solution, preferably pyrogen-free water.

23. The method according to claim 22, wherein the hydrogel comprises at least 80% by weight pyrogen-free water or saline solution, preferably at least 85 %, more preferably at least 90%, even more preferably at least 95% by weight pyrogen-free water or saline solution.

24. The method according to claim 17, wherein the administering comprises injecting the hydrogel into the intra-articular cavity of a joint.

25. The method according to claim 17, wherein the hydrogel is radio-labelled and the administering may be monitored by visualisation.

26. The method according to claim 17, comprising further injections to excessively stressed areas of the cavity.

27. A prosthetic device for the treatment of arthritis, wherein the device comprises a polyacrylamide hydrogel comprising 0.5 to 25% by weight polyacrylamide, based on the total weight of the hydrogel, said device administered to the intra-articular cavity of joint.

28. The prosthetic device according to claim 27, wherein the hydrogel further comprises at least 75% by weight pyrogen-free water or saline solution, preferably pyrogen-free water.

29. A prosthetic device for augmenting or replacing cartilage in the intra-articular cavity of a joint, said device comprising a polyacrylamide hydrogel comprising 0.5 to 25% by weight polyacrylamide, based on the total weight of the hydrogel.

30. The prosthetic device according to claim 29, wherein the hydrogel further comprises at least 75% by weight pyrogen-free water or saline solution, preferably pyrogen-free water.

31. The prosthetic device according to claim 27, implanted or injected into the intra-articular cavity of a joint, preferably injected.

32. The prosthetic device according to claim 27, wherein the device is implanted and surface treated.

33. The prosthetic device according to claim 27, wherein the joint is selected from the group consisting of a knee joint; a hip joint; and the metacarpal-phalangeal and interphalangeal joints in hands and feet.

34. The prosthetic device according to claim 27, wherein the hydrogel is radio-labelled.

35. The prosthetic device according to claim 28, wherein the joint comprises a knee joint, a hip joint, or the metacarpal-phalangeal or interphalangeal joints in hands and feet.